

borders and gray, depressed, necrotic bases. The destruction of the mucosa occurred without fibrosis or cellular exudate in the deeper tissues, but when the submucosa was invaded, mononuclear leukocytes and a dense fibrous wall infiltrating the adjacent mucosa were characteristic. Amebas were found in the mucosa and in the necrotic tissue surrounding the ulcers. The liver abscesses were multiple in one case, while in the other but a single abscess was seen. The abscesses were without a fibrous wall, except where they approached the capsule of the liver. The borders of the abscesses were surrounded by a zone containing small, irregular necrotic areas. The abscesses burrowed deeply, and spread out within the interior of the lobes. Their interior was a mesh-work of liver-structure in all stages of disintegration. They contained a grayish white fluid pus, in which many amebas showing protoplasmic movement were seen. The authors suggest the possibility of transmission to the human as well as to laboratory animals of amebic dysentery, both by frankly sick monkeys and by others acting as carriers without, at the same time, showing any evidence of disease.

The Bacteriology of the Urine in Lobar Pneumonia.—In a short paper, accompanied by a concise and interesting chart, MATHERS (*Jour. Infect. Dis.*, xix, 416) reported the result of cultures made from catheterized specimens of urine obtained from cases of pneumonia in various stages of the disease. The research of Fraenkel and Rieche on pneumococcus in the kidney, in which they reported the finding of pneumococci in 22 out of 26 cases studied, is cited. In beginning the work, the questions as to whether pneumococci were commonly found in the urine of pneumonia patients, and whether, if found, the organisms had suffered any change during their passage through the kidney, were especially considered. After obtaining the specimen aseptically, a small portion, after centrifugalization, was examined both unstained and in stained smear for casts, leukocytes, bacteria, and other pathological elements. Cultures were made by plating the sediment from 10 c.c. of urine on human blood agar. These plates were then incubated at 37° C. for twenty-four hours. By cultural methods, pneumococci were isolated from the urine in 10 out of 26 cases. Gram-positive diplococci were seen in smears from the sediment in 18 of the 26 cases. These were doubtless other types of cocci, as staphylococci were frequently found, or possibly they represent dead pneumococci. The latter is possible, since urine is a poor medium for the growth of pneumococci. The organisms were all identified by the use of specific sera in addition to the usual differential reactions. Of the ten strains found, five belonged to Group I, three to Group II, and two to Group IV. Pneumococci were isolated from the blood and sputum of the cases studied; these corresponded in all the major characteristics to those obtained from the urine of the same case. Minor morphological differences, considered insignificant by the author, were found between the pneumococci from blood, sputum and urine in a given case. As to other organisms, two streptococci, one hemolytic and one of the viridans group were isolated; staphylococci and diphtheroid bacilli were found in several instances. The period immediately before or after the crisis was the most favorable one for the isolation of pneumococci from the urine. The writer concludes that during a

pneumococcal infection in the respiratory tract, pneumococci may be excreted in the urine. They appear to bear no definite relation to other pathological elements in the sediment; the strains isolated from the urine are in all essentials like those found in the blood and sputum. Hence, the deduction is made that urinary cultures may be of great value in the diagnosis of pneumonia, and of pneumococcal infections generally.

Antibody Productions by Typhoid Vaccines.—STONER (*Jour. Immunol.*, 1916, i, 511) attempts to solve the problem concerning the value of the different kinds of typhoid vaccine. He shows by a review of the literature that the experimental results of different writers do not agree as to the efficiency of the different vaccines. Not only does the production of (1) agglutinins, (2) opsonins, (3) bacteriolysins, and (4) precipitins vary in individuals or animals inoculated with these differently prepared vaccines, but also the results obtained by various experimenters. Stoner used for his experiments three types of vaccine. The first was the usual emulsion of twenty-four-hour agar cultures in saline and killed by heat. The second was prepared in a similar manner, save that before inactivation the bacteria were treated with antityphoid immune serum for three hours at 37.5° C. and then for twenty-four hours in the refrigerator. The third was prepared and treated with serum in a similar way to the second; then the organisms were killed with absolute alcohol, washed, dried *in vacuo* over sulphuric acid, and then ground in a mortar and emulsified in saline. These three vaccines were used to immunize both rabbits and humans. Sera of all cases were tested, after immunization, for agglutinins, opsonins, and bacteriolysins. It was found in both humans and animals that the first, or non-sensitized, vaccine stimulated a much more potent agglutinating serum. The opsonins and bacteriolysins, however, were slightly more marked after the use of either of the other two vaccines. Considering these results, and in view of the fact that experiments by Bull have proved the agglutination to be an important factor in the immunity, the author concludes that the sensitized vaccines are in no way superior to the non-sensitized. He states that though our knowledge of the mechanism of typhoid immunity is very scant, and that even after the disappearance of the demonstrable immune substances a potential immunity is still present to a certain degree, we still must give some weight to the presence of these substances in the blood. Thus on account of these substances and from lack of other evidence to prove the greater efficiency of the newer types of vaccine the author recommends the non-sensitized vaccine in all cases.

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